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3rd and 4th Floors:

Both of these floors are currently under renovation including the removal of all friable ACM. The floors encompass both old and new structural areas. Cementitious fireproofing (Monokote) is applied on the "old" side in the area encompassing grid lines 1-10/G-L. Mechanical Insulation materials were observed to be glass fibre along water lines and over ducted air systems. Monokote materials are exposed and appear in good condition other than in areas disturbed during pre-removal renovation activities.

Assessment: Spray-applied Insulation -- Good Condition -- High Disturbance Potential

1st and 2nd Floor (Sears):

This large retail space encompasses both old and new structural areas. A suspended ceiling is in place over retail floor spaces. Exposed cementitious fireproofing (Monokote) can be found in non-retail areas below the mezzanine (e.g., next to the freight elevators). Mechanical Insulation materials, found in ceiling spaces, were observed to be glass fibre along water lines and over ducted air systems. Sprayed-fibre (Mineral fibre) fireproofing is applied to structural support beams in elevator shaft areas. Cementitious fireproofing (Monokote) is applied to the deck and oversprayed on beams in the area encompassing grid lines 1-10/G-L (1-9/G-L on Main Floor). Sprayed-fibre and Monokote applications both appear in relatively good condition with the exception of those areas where the installation of ceiling and duct hangers has resulted in disturbance. Access to the ceiling space and to non-retail areas is limited to building maintenance personnel and Sears Sales and Security Personnel.

Assessment: Spray-applied Insulation -- Good Condition -- Low Disturbance Potential in retail areas -- High Disturbance Potential in non-retail areas

2nd Floor Mezzanine:

This storage area encompasses grid lines 1-9/K-L. Cementitious fireproofing (Monokote) is exposed on the deck and oversprayed on beams in the area. Mechanical Insulation materials were observed to be glass fibre along water lines and over ducted air systems.

A Chiller unit in the mezzanine mechanical room was observed to be installed on isolation mounts. The Monokote application appears in moderate to poor condition. Limited physical disturbance was noted along with areas of water damage. Some patching of the application has taken place.

Assessment: Spray-applied Insulation -- Moderate to Poor Condition -- High Disturbance Potential

Parkade Skywalk:

This overpass joins Sears to the Parkade over Richards Street. A suspended ceiling conceals a bare Q-deck roofing assembly. No insulation materials were observed.

Mid Plaza Level:

Two retail areas were examined (Old Birk's and J. Reid Shoe Stores). A cementitious fireproofing (Monokote) was observed to be applied to the deck and oversprayed on beams. Mechanical Insulation materials were observed to be glass fibre along water lines and over ducted air systems. Monokote applications appear in relatively good condition with the exception of those areas where the installation of ceiling and duct hangers has resulted in disturbance. Ceiling space access is limited to building maintenance personnel and authorized renovation contractors.

Two non-retail areas were examined (Electrical and Mechanical Areas). A cementitious fireproofing (Monokote)

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was exposed on the deck and oversprayed on beams in both areas. An additional application of cellulose material (green in colour) was observed over the Monokote application in the Mechanical area. The application appears in moderate condition in both areas and has been disturbed by dry wall stud or duct hanger installations in these areas.

Assessment: Spray-applied Insulation -- Moderate to Good Condition -- High Disturbance Potential

Cordova Street Level:

Two retail areas were examined (Old Sony Store and Tchibo Store). Suspended ceilings were observed in most store areas. Two distinct applications of a Sprayed-fibre (Mineral fibre) and a cementitious fireproofing (Monokote) were observed on deck and beam in the Tchibo area. Only Monokote materials were observed in the Sony store. Mechanical Insulation materials were observed to be glass fibre along water lines and over ducted air systems. Fireproofing applications appear in relatively good condition with the exception of those areas where renovation work has resulted in disturbance. Ceiling space access is limited to building maintenance personnel and authorized renovation contractors.

Assessment: Spray-applied Insulation -- Good Condition -- High Disturbance Potential

Trucking Level:

A Sprayed-fibre (Mineral fibre) application is exposed on deck and beam over most areas on the "old" side of the building. The material appears in good condition but is accessible in a number of storage and receiving areas.

Parking Level:

No spray-applied insulation materials were observed on this level. Mechanical Insulation materials on water tanks in the Mechanical Room may contain asbestos (external finishing coat). Such materials appear in good condition and were not disturbed for sampling. Insulation materials on pipe lines were observed to be glass fibre.

Assessment: Mechanical Insulation -- Good Condition -- Low Disturbance Potential

Harbour House:

An exposed application of cementitious (Monokote) fireproofing was observed on deck (Q-deck) and beam. The material has been sprayed black and appears in good overall condition. Some damage was noted. Access is limited to building maintenance personnel. Mechanical insulation materials were observed to be glass fibre.

Parkade:

An exposed application of cementitious (Monokote) fireproofing was observed on deck and beam. The application is limited to the Cordova and Home Street Levels. The material appears in moderate condition with some water damage and delamination in evidence. The material is readily accessible.

629 So as to fairly and accurately reflect the information presented to the owners of the Building in that report, I will set out the observations made in it under the heading "Discussion":

Discussion

Asbestos exposure was initially associated with a fibrotic scarring of the lungs termed Asbestosis. Asbestosis reduces the lungs vital capacity, diffusing capacity and arterial oxygen content leaving the victim short of breath on exertion. Asbestos exposure has more recently been linked to lung cancer, cancer of the chest and abdominal linings and cancer of the esophagus, stomach and colon.

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A latency period of 15 to 35 years is often associated with asbestos-related diseases. Such latency periods have made epidemiological studies difficult. Although a class dose-response relationship has been established for asbestos-related disease, the assessment of risk at low exposures is at best uncertain. In fact, no scientific consensus exists as to the "safe" or "threshold" level of exposure to asbestos.

There is also a considerable amount of scientific controversy regarding the effect of fibre type. All fibre types have been found to lead to all types of asbestos-related disease. However, the amphiboles (crocidolite and amosite) are generally considered to be more hazardous than the serpentines (chrysotile).

Although the mechanism and epidemiology of asbestos carcinogenesis is not yet well defined, accumulating evidence suggests that human exposure should be maintained at a minimum. It should be noted, however, that asbestos is a naturally occurring mineral and that measurable concentrations of asbestos fibre in air can usually be obtained in any given location. In addition, the presence of ACM on building and mechanical structures does not in itself imply the presence of elevated airborne asbestos.

The ACM observed in the Spencer Building and in associated building structures are friable materials in that they can easily be reduced to dust in the hand. One possible exception is asbestos-cement drainage pipe which was observed throughout the building and is nonfriable. Friable materials are of concern in that they have a potential for airborne fibre release. Friable materials in poor condition with a high potential for disturbance or erosion will release fibres in the air.

The assessment factors outlined in Appendix 1 provide an indication of material condition and the potential for disturbance or erosion. Water damage and direct air stream factors have been directly correlated with elevated airborne fibre levels (3). The assessment table in Appendix 2 provides a simple qualitative guide for the assessment of mechanical structures with friable ACM. Possible control alternatives include operating and maintenance programs, enclosure and removal.

Removal eliminates the potential for airborne fibre release and provides the only permanent solution. In general, removal involves the establishment and use of polyethylene containment barriers, an air exhaust system, a decontamination enclosure system and appropriate protective equipment.

Enclosure applications involve the installation of various barrier materials with appropriate consideration for future maintenance and renovation work.

Operating and maintenance programs are instituted when deferred action is warranted by material hazard assessments. The program involves training of maintenance staff, periodic inspection and hazard assessment, appropriate scheduling of maintenance activities and proper work procedures.

Our control recommendations are listed in Appendix 4. The recommendations coincide with the direction provided by the assessment table (Appendix 2) and our experience in the field. In general, we feel that exposed ACM in non-retail areas of the 1st and 2nd Floors and on the mezzanine level of Sears should be addressed. Removal is the preferred control option although enclosure applications could be considered in some areas. Similarly, removal should be considered for retail stores on the Mid-Plaza and Cordova Street levels to coincide with planned renovations. Immediate control measures are not required for other floor levels although removal should precede planned renovations involving fire walls, floor penetrations etc. on floors 5 through 8. In addition, any plans to remove, replace or reinstall pipe systems in the 8th Floor Void Space should be preceded by asbestos removal procedures. Finally, building maintenance personnel should be properly instructed with regard to ceiling work procedures and the use of respiratory equipment in this regard.

630 The Report concludes with the follow comments:

Conclusions

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Asbestos is a proven carcinogen and any release of asbestos fibres into the atmosphere creates a potential health hazard. A relatively high fibre release potential exists for exposed ACM in areas delineated by Appendix 4. This potential is somewhat reduced for ACM in unexposed areas. Building maintenance personnel should be familiar with the location of friable ACM and with procedures to be used when working in the vicinity of these materials.

631 Although the Report supports the plaintiffs' decision to remove the material, I do not think it is particularly helpful in substantiating the plaintiffs' legal claim, based as it is upon the allegation that the Building was contaminated, causing damage to property and posing a risk to health.

632 I say that for two reasons. First, I have grave doubts about the medical premises under which the author of the Report proceeds. The medical evidence presented in this case does not, for example, support the conclusion that "any release of asbestos fibres into the atmosphere creates a potential health hazard". As discussed above, I have concluded that there is a point, depending upon the type and size of fibres, below which there is no potential hazard.

633 Second, what is striking about the Report is that, although it suggests removal as the "preferred" option, it does not suggest it to be the only option. Indeed, the Report finds that in some areas that the fireproofing is in good condition and has low disturbance potential. Surely, if the Building was as contaminated as the plaintiffs allege, it would have recommended, as the only viable option, the removal of this allegedly hazardous product.

634 In their written arguments, under the heading "Reasonableness of Removal", the plaintiffs acknowledge that more than one option was available. They state:

The Plaintiffs were told, by their consultants, that to conform with the law in the Province, they would be required to put in place a management program for the asbestos through the life of the building and remove the material at demolition. Or, they could remove it immediately and prevent forever, the possibility of an accident with the result of exposing building occupants and workers to a lethal carcinogen.

I find this to be a significant admission, one which, in my opinion, is incongruent with their pleadings.

635 The plaintiffs have pleaded that:

62. The presence of asbestos poses a danger to the health of the workers and occupants ...

65. As a consequence of the inherently dangerous health hazard and damage to property caused by the asbestos spray fireproofing as pleaded herein, and as a consequence of the Plaintiffs' inability to repair, modify, perform ordinary maintenance work, or renovate the Improvements without causing the further release of asbestos fibres thereby endangering the health of workers and occupants, Plaintiffs undertook a program of abatement ...

636 In other words, because of the contamination and the corresponding health hazard, the plaintiffs undertook to remove the asbestos. Yet this assertion does not make sense in light of the fact that other alternatives were available at the time the decision was made, and other alternatives were suggested in the final Report of May 2, 1987. One can hardly allege that the mere "presence of asbestos poses a danger" when one of the options recommended by their own consultants involved keeping the asbestos in the building.

637 I am not persuaded by the Pinchin-Harris Report, or for that matter, by the oral testimony given by Mr. Holland, that the Building is or was contaminated. Although the removal may have made good business sense -- both in securing DPW as a tenant and in improving the value of the Building -- the evidence concerning the advice and Report of Pinchin-Harris does not substantiate the plaintiffs' claim.

The Ewing Report

638 Mr. Ewing is a certified industrial hygienist; that is, a person who, as he put it, "focuses on the identification, evaluation and control of health hazards, both occupational and non-occupational". He is certified under the regulations of the

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United States EPA Regulations as an inspector, responsible for determining whether a building contains asbestos and, if so, the condition of the material.

639 Mr. Ewing has carried out more than 600 surveys relating to asbestos in buildings. His certification under the *Asbestos Hazard Emergency Response Act* allows him to design and supervise "response actions" in buildings that contain asbestos, such as removal or encapsulation or enclosure of the asbestos-containing materials.

640 Mr. Ewing has been involved in the preparation of many "Operations and Management Programmes" for various types of buildings found to contain ACMs. These programmes constitute a set of procedures and practices for the building owners, custodians, maintenance personnel and outside service workers to follow in order to minimize the potential for exposure so long as the material remains in the building.

641 Mr. Ewing was qualified to give expert opinion evidence on:

- 642 1. locating and assessing the condition of asbestos-containing materials ("ACMs") in buildings;
- 643 2. assessing the degree to which ACMs have released fibres and the potential for future release; and
- 644 3. the options available to owners of buildings found to contain ACMs.

645 Mr. Ewing inspected the Building in May 1990, long after the removal process had begun. The purpose of his inspection visit was to evaluate the fireproofing material present in the Building and to determine the potential for exposure to asbestos in that material. In an Executive Summary to his written report, entitled "Asbestos Containing Fireproofing in the Spencer Building, Vancouver, British Columbia" (July 1990), he stated that:

Asbestos-containing fireproofing remaining in the Spencer Building is friable and deteriorating. This deterioration and previous maintenance activities has resulted in asbestos-containing dust and debris being deposited on surfaces above the suspended ceiling system. The space above the suspended ceiling system serves as a return air plenum, and is therefore an integral part of the building's ventilation system.

The implementation of control procedures contained in the operations and maintenance programme should reduce the risk of exposure, permitting the building to remain open and occupied.

Planned renovation activities necessitate the continued removal of the asbestos-containing fireproofing in a safe manner.

646 The British Columbia Workers' Compensation Board defines "friable material" as a material which, when dry, can easily be crumbled or powdered by hand. Friability is determined by physically touching the material in question. Mr. Ewing did that, and he also "brushed" the back of his hand across the surface of the material and saw that particles were thereby released from the material. He said that he performed those tests to sprayed fireproofing material which had been applied to the concrete deck of the Building, material which he described as "spray-applied ... vermiculite-containing material", which he had, in his mind, narrowed down to two possible products, Monokote and another similar looking material that contains a starch component.

647 The "potential for exposure" he was looking into was exposure through inhalation by maintenance personnel and service workers and even by ordinary building occupants. When determining that potential, he said, one looks at the degree of friability of the material, its accessibility to contact, the presence of water damage, and for significant sources of disturbance through vibration of an air system. Water damage, he said, will:

... dissolve the binder in the material and cause fibre release to occur faster. It can cause delamination of the material where the fireproofing would separate from the substrate itself.

648 Mr. Ewing spoke of the two types of exposure to asbestos in buildings. One type is called "prevalent level exposure"

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which results from the long-term -- day in and day out, year in and year out -- gradual release of asbestos fibres into the air of the building. He said that those levels of exposure are usually very low, and for that reason, based on his own experience, he saw no reason to incur the "tremendous expense" of testing the prevalent level of asbestos fibres in the ambient air of the Building.

649 The other type of exposure is "episodic", which, he said, is the "primary concern with in-place fireproofing". Episodic exposure, sometimes referred to as "peak exposure", is a short-term exposure that may occur when, for example, a maintenance worker comes into direct contact with the fireproofing material, or when a custodian sweeps up dust that contains asbestos fibres that have been released from the material. Mr. Ewing noted that there are a wide variety of activities which can cause episodic exposure in buildings, such as the renovation of the building, or even a maintenance person going up into the plenum area to replace a piece of duct work or to install a computer cable in the vicinity of the fireproofing. Basically, he said, episodic release can be caused by any activity that will disturb the asbestos-containing dust that has settled down onto surfaces.

650 From the ceiling areas of the sixth and seventh floors, Mr. Ewing collected six dust samples and four bulk samples of the in-place fireproofing material he observed. These were numbered and the locations noted. Photographs were taken showing the presence of dust and debris on top of light fixtures and ceiling tiles. The samples were taken by Mr. Ewing back to Atlanta, Georgia, where the dust samples were analyzed by Dr. Millette of McCrone Environmental Services, using transmission electronic microscopy ("TEM"), and the bulk samples were analyzed by Environmental Analytical Laboratories, using polarized light microscopy ("PLM"), the standard EPA method for analyzing bulk samples of friable materials.

651 Based on the analysis of the four bulk samples taken from the concrete decks of the sixth and seventh floors of the Building, Mr. Ewing said that two of them are "consistent with" Monokote fireproofing, but he acknowledged that he could not make a definite determination from the test results. In fact, the two samples he described as "consistent" with Monokote contained 22% and 20% chrysotile asbestos respectively, a far cry from the chrysotile content shown in the Monokote formula which was put into evidence. One of the remaining two samples contained 7% chrysotile and the other had no asbestos in it whatsoever. The one containing 7% chrysotile was thought by Mr. Ewing to be a mixture of two different types of fireproofing, but he could not be sure.

652 Six dust samples were taken and analyzed. Mr. Ewing said that such sampling is done to "evaluate the extent of asbestos contamination due to the release of fibres from fireproofing", and to ascertain "potential exposure due to dust reentrainment". TEM analysis of dust samples provides, he said, a quantitative determination of asbestos fibres, bundles, clusters and matrices. He defined a "fibre" as a single structure with parallel sides; a "bundle" as two or more fibres lying side by side; a "cluster" as two or more fibres or bundles lying across each other; and a "matrix" as one or more asbestos fibres imbedded in a non-asbestos medium. The four different types are referred to as "structures".

653 The primary reason for distinguishing between dust and debris relates to the potential for exposure to occur. Asbestos-containing debris is generally not considered respirable. However, when debris drops to the floor and is crushed by foot traffic, the fibres released are of respirable size and may be entrained into the air and create a risk of exposure.

654 In his Report Mr. Ewing stated:

Accordingly, the presence of asbestos-containing dust and debris represent a clear potential for airborne asbestos exposure. The magnitude of exposure is related directly to the activity causing the resuspension of the dust, the surface that the dust is resting on, and the volume of the air into which the dust is resuspended. There is no one number establishing a dividing line between "contaminated" and "not contaminated". For a nonporous surface in a typical office setting the following asbestos in dust concentrations are offered along with corresponding qualitative descriptors.

Surface Concentration (Asbestos Structures/cm ²)	Degree of Contamination
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Less than 1,000	No Significant Contamination

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1,000-10,000	Low Contamination
10,000-100,000	Moderate Contamination
Greater than 100,000	Heavy Contamination

655 He then reported that:

The average concentration of asbestos structures found on the upper ceiling surfaces of the Spencer Building was 1,400,000 asbestos structures per square centimeter. Renovation activities, such as those conducted in the Spencer Building will disturb this surface contamination resulting in significant airborne exposures to people in the area.

656 The result of the dust sampling tests show a degree of surface concentration far in excess of what Mr. Ewing terms "heavy contamination".

657 Mr. Ewing also observed that, in the Building, the space above the suspended ceiling of the sixth and seventh floors (where the samples were taken) serves as a return air plenum. Air from occupied spaces passes through openings in the suspended ceiling and is drawn to the mechanical room to be heated or cooled and returned back to the occupied spaces via air ducts and diffusers. He opined that:

Accordingly, asbestos-containing dust and debris which becomes airborne will be drawn into the air handling system and redistributed elsewhere in the [B]uilding.

658 In his Report, Mr. Ewing continued by saying:

The use of dust sampling to estimate the potential for future exposure is an appropriate *supplemental* assessment tool in this instance. The use of air sampling with TEM analysis alone provides only limited information concerning the airborne asbestos structure concentrations in the areas where the samples are collected, only during the sampling period, and can only be considered representative for the activities and building conditions (i.e., occupancy, ventilation) during the sampling period. For these reasons and many more (e.g., extensive cost, methodology limitations) regulatory agencies in British Columbia, the United States, and elsewhere do not recommend its use as the primary assessment tool for asbestos in buildings ...

Once asbestos-containing materials are identified, such as the fireproofing in the Spencer Building, it is appropriate to implement an operations and maintenance program. Such a program, like that recommended by Pinchin-Harris & Associates, Ltd. and implemented by the building management, has the goal of minimizing asbestos exposure until a permanent solution to the problem is implemented ...

Control measures beyond the operation and maintenance program can include encapsulation, enclosure and removal. Encapsulation and/or enclosure are only temporary measures, and still require the operations and maintenance program. Concerning various control measures for sprayed-on friable materials, the Committee on Asbestos Hazards in Public Buildings (made up of individuals from the provincial Ministries of Labour, Education, Health and the Workers' Compensation Board) stated the following:

Removal completely eliminates the source of exposure to asbestos and is, therefore, a permanent solution. Both enclosure and encapsulation are containment methods; they are not permanent solutions since the asbestos material remains in the structure. When containment methods are instituted, a recurrence of the problem at a future date can be expected (i.e., at the time of the building renovation or demolition).

Removal of asbestos-containing fireproofing, such as that present in the Spencer Building, in conjunction with planned renovation activities is a prudent and responsible course of action.

659 Under the rubric "Conclusions", Mr. Ewing opined that:

1. The fireproofing in the Spencer Building is friable.

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2. The fireproofing has released asbestos fibres (predominantly chrysotile) in the past, due to deterioration and maintenance practices, and is expected to continue to do so.

3. The fireproofing has been damaged due to previous routine maintenance and renovation activities. The amount of future damage due to these activities should be reduced significantly as a result of the implementation of an operations and maintenance program.

4. Encapsulation and/or enclosure of the fireproofing should not be attempted at this building.

5. Removal of the fireproofing in conjunction with the continued renovation of the Spencer Building is the prudent course of action.

6. Removal of the fireproofing should be performed properly, using recognized abatement techniques, and providing adequate protection to the removal workers. Failure to perform the asbestos removal properly could result in an increased risk of exposure to workers, bystanders, and future building occupants.

660 Mr. Ewing concluded from visual observation that the fireproofing had released asbestos fibres in the past due to deterioration and maintenance practices. He saw the debris and dust on surfaces below the fireproofing material.

661 Even with removal, some of the asbestos-containing material is left behind. It is therefore common practice, wherever that residue might be accessible, to lock in the remaining fibres by using a sealant.

662 As mentioned above, two options -- encapsulation and enclosure -- were rejected by Mr. Ewing. Encapsulation is the spraying of a paint-like material onto the surface of the material to place a barrier across its surface. Enclosure consists of building an air-tight barrier below the fireproofing to prevent the mixing or mingling of air between the plenum and the enclosed area.

663 When asked to explain why he concluded that encapsulation or enclosure should not be attempted in the building, he replied:

Primarily for the reasons that I discussed a little earlier about the -- if you were to encapsulate or enclose. I really feel very strongly that encapsulation just is simply not an option, it's just -- it would be a very far-fetched option, in my opinion, for the problems of the possibility of water damage, the added weight to the fireproofing, the cost of encapsulation, because the entire area that you're going to encapsulate will have to be treated just like an abatement area. The workers will have to be protected in the same manner as if they were removing the material, because when you spray the fireproofing with the encapsulant, it tends to dislodge a significant concentration of asbestos dust into the air, so it in itself creates exposure, and you are still left with the problem to manage over a period of time and ultimately you have to remove it, and that removal is going to now be more difficult because the encapsulant not permitting the material to become -- get wet.

The option of enclosure again to create an air-tight barrier will require them to take down the existing ceiling system, lower all the utilities, place the enclosure in place using protected employees, then re-install all your utilities, re-install your ceiling system, and then your operations and maintenance programme would be limited down to -- you cannot go into the enclosure, but then again at some point you will have to go back prior to building demolition or if you're doing a renovation that will disturb the enclosure, you will have to go back, and if the renovation will disturb the enclosure or demolition will disturb -- the demolition obviously is going to disturb it at that point, the removal would need to occur. So I guess put simply, it's a question of when to do the removal, rather than if to do the removal, which is why my conclusion for number 5, and why I thought it was a -- let me use the word appropriate in this instance, because I did not feel that based on what I saw and based on their own end procedures, and particularly based on them feeling the need to go through a thorough training of myself before allowing me to disturb any of their materials to do my inspection, which led me to believe that they are taking that seriously, that the continued O & M procedures that they are following were appropriate, but then when the

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renovation occurs, that is the appropriate time to deal with it.

664 Mr. Ewing was asked whether, in his opinion, the algorithm adopted by Pinchin-Harris as an assessment tool (one taken from an EPA book on the subject) was an appropriate tool to use in 1987. He replied:

In 1987, that was the recognized assessment protocol by the -- that the EPA had put out, and it continues to be today that the primary method of assessing in-place asbestos-containing materials is a visual assessment. Any other testing you do such as air sampling or dust sampling, such as that that I performed in the building, are considered secondary and supplemental assessment tools to the primary assessment method.

665 Some of the experts called by the Grace defendants were asked for their opinion of Mr. Ewing's Report.

666 Over the objections of Mr. Roberts, I found Dr. Elmes qualified to comment on the Report, on the basis that he had an expertise in the interpretation of air samples taken by others.

667 Dr. Elmes was asked whether the air sampling results from the Ewing Report suggest a risk to the Building occupants. Dr. Elmes stated:

There are no air sampling, in the accepted sense of the word, results in this report. The samples were taken by picking up dust off various surfaces. They weren't taken from the air. So they consisted of particles, many of which were too large to be respirable. They were then subjected to ultrasonic treatment to break up these particles and, therefore, they may have created an artificial situation which may or may not represent what might have occurred at some time in the air of the building ...

This investigation, this examination of this dust that was taken from the surfaces within the building can be used to give us some idea of what the fibres are in the material which might be released if the material was damaged or disturbed. *It doesn't give us an idea of how much release was occurring or whether the people in the building were at any risk from the presence of this material in the building ...* (emphasis added)

668 Dr. Elmes went on to suggest that these type of sampling techniques could be used to find out what "might be released" if the building was demolished or the material being stripped out.

669 Dr. Bragg expressed similar concerns. He suggested that the surface sampling techniques used by Dr. Ewing were procedures that existed in draft form only, in the sense that the procedure had not been codified by any of the codifying bodies. Indeed, he suggested that he was not aware of any regulatory body that suggests the use of this procedure, nor was he aware of its acceptance or use by any scientific organization.

670 According to Dr. Bragg, the problem with surface sampling is that it provides no insight into the key question, namely, whether there are measurable airborne levels of asbestos. In this regard, he stated:

There has been an enormous amount of research over the years, particularly in the nuclear industry, attempting to relate material on surfaces to material in the air and I think it's generally accepted now that there is no relationship and that the fundamental reason for that is that the relationship is between disturbance and airborne material and not between material on the surface.

In other words, simply because asbestos can be detected on the surface does not mean that fibres from it will become airborne and in turn pose a health risk.

671 When asked in cross-examination if an examination to determine whether the particle had moved was a reasonable thing to do, Dr. Bragg responded:

It depends on what our objective is. If our objective is to inquire whether it has moved, yes, it is. If our objective is to determine whether or not it's going to result in inhalable fibres in the air, then I would suggest that it is not an

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appropriate procedure.

672 Such a study, he acknowledged, may indicate whether there had been some form of disturbance, but he said that:

... it's important to discriminate between a disturbance which produces visible debris where the lay understanding that vibration and air flows may produce a disturbance is indeed true. Vibration and that type of air flow will, indeed, be capable, with certain types of materials, particularly with the dry sprayed material, of producing a disturbance which causes a change in location. What's important to do is to discriminate, though, between that -- and we are now able to do so on the basis of the type of study that Mr. Ewing has done, for example -- between that and the airborne material that is small enough to be of health significance.

673 I accept the criticisms expressed by Drs. MacDonald and Bragg about the methodology employed by Mr. Ewing. I am, accordingly, unable to accept that the results support a finding that the Building is in fact contaminated to a point where it posed a health hazard to its occupants, necessitating removal.

674 I should also mention that, as with the Pinchin-Harris report, Mr. Ewing does not indicate that immediate removal is the only option. For example, while he rejects the option of enclosure, he does so, not because leaving the material in the Building would, as the plaintiffs have alleged, necessarily create a health hazard for its occupants, but rather because, in his opinion, removal has to be done at some point -- either now or at the time of demolition -- and so better now than later. As quoted above, Mr. Ewing stated:

So I guess put simply, it's a question of when to do the removal, rather than if to do the removal ...

675 Far from supporting the plaintiffs' claim that immediate removal was necessitated by the contamination and the accompanying health hazard, this statement suggests that other options -- while admittedly ones not endorsed by Mr. Ewing -- were nevertheless available.

676 There is one final question to deal with before leaving this topic, and that is why there was no evidence of air sampling tests taken in the Building.

677 In their arguments, the Grace defendants and the plaintiffs each accused the other of conducting such tests and not disclosing the results. This point is important because an adverse inference may be drawn against a party who has failed to produce the results of such tests.

678 The Grace defendants maintain that they did not conduct any independent air sampling tests and there is no evidence to support the allegation that they did. In fact, the only evidence is to the contrary. In a letter from the plaintiffs' former counsel, dated June 15, 1988, Grace-Conn. was informed that "there is to be no air sampling by your representatives".

679 There is, however, evidence from the plaintiffs' own correspondence suggesting that they authorized the taking and testing of air samples within the Building. In a letter dated November 15, 1988, the plaintiffs' former counsel instructed Pinchin-Harris as follows:

Would you please attend to air sampling, particularly in the areas of the Spencer Building and Harbour Centre where the spray fireproofing has not yet been removed.

680 In the absence of direct evidence to the contrary, I can only assume that such samples were taken, and the results not tendered in evidence because they did not advance the plaintiffs' case.

681 Accordingly, I draw the inference that the asbestos levels in the air of the Building are not inconsistent with those that one would expect to find in the ambient air.

XVI. The Decision to Remove and Replace the Fireproofing Material

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682 I am satisfied that, contrary to the reasons alleged by the plaintiffs, their decision to remove the existing fireproofing material was motivated entirely by economic considerations. This was made abundantly clear during Mr. Giles' cross-examination of Mr. Hall, when the following questions were asked and answers given:

Q. Now, it's in evidence, and you've testified to the fact, that in the spring of '86, you had an offer to lease by the Department of Public Works on behalf of the fisheries and oceans department?

A. A request for tender, yes.

Q. Yes. And it included a specimen lease, and we looked at that yesterday when you were giving evidence, which called for a warranty on your part that there would be no friable asbestos anywhere in the building?

A. That is correct.

Q. That's correct. And I think by September the 9th, '86, you were advised by Ottawa, subject to formal contract, they were going to take the lease?

A. That is correct.

Q. And at that time, it was on the basis that you were warranting the entire building was asbestos-free?

A. That is correct.

Q. And I suppose it was a source of some satisfaction that you had obtained this tenant for those two floors?

A. That is correct.

Q. I've looked at the rent, it's over a million dollars for the first five years, a million dollars a year; is that correct?

A. Yes.

Q. And for the next five years, there's a very considerable jump in the rent. I notice it goes up to close to a million six or more?

A. That is correct.

Q. And I take it this is important revenue to you?

A. It is indeed.

Q. Now, on March the 30th, '87, you were shut down by the Workers' Compensation Board --

A. Correct.

Q. -- on the grounds that there was asbestos. You had it looked into, and Pinchin-Harris, with their hazard report, I think on May the 2nd, confirmed there was friable asbestos on every floor?

A. With the exception of the ninth floor and the underground parking areas, that is correct.

Q. I beg your pardon, every floor we've just discussed.

A. That is correct.

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Q. One to seven and the upper and lower mall. And this must have been a frightful shock?

A. It was.

Q. And a frightful shock in relation to the proposed deal with the Department of Public Works, given that that was on the basis that all the asbestos had to be removed?

A. Correct.

Q. Yes. You testified yesterday -- I think your expression was a mammoth problem?

A. Yes.

Q. Yes. Now, the fact is, though, that you alleviated your problem somewhat by persuading the Department of Public Works to amend the specimen lease, to amend the offer to lease, with respect to the warranty that it was free from asbestos throughout the entire building?

A. That is correct.

Q. Yes. And --

A. Incidentally, we didn't persuade them. They came forward with those -- with that agreement as being a condition of them fulfilling their lease.

Q. They were prepared to alternate [sic] their position?

A. That is correct.

Q. Yes. And certainly, that was agreeable to you?

A. That's correct.

Q. And it was something you were prepared to agree to, happy to agree to, if it meant keeping this tenant, the Department of Public Works?

A. That's correct ...

Q. Now, this morning before luncheon I suggested to you that you persuaded the Department to agree to this amendment and, if I remember correctly, your answer was to the effect that they were prepared to do so, that is, that they were prepared to give you the amendment?

A. They gave us the amendment, that is correct.

Q. Yes. You certainly hoped you'd get it?

A. It was our aim to establish some relationship that would permit us to keep them as a tenant.

Q. Yes. And in that sense you hoped that they would agree to an amendment that would permit you to leave the asbestos in place in the premises of all the other tenants?

A. Our main aim was to keep them as a tenant, for them to honour this lease. They were the ones that stipulated the conditions under which they would do that and they were the ones who said that, "We will not require you to

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remove it out of the entire building immediately" which, in effect, would have made us have to terminate this lease or have to not comply with this lease.

Q. And you were pleased to get this agreement to that effect?

A. We were pleased to get that agreement.

Q. Yes. And now isn't it fair to say that you initiated the suggestion that the Specimen Lease -- that the offer to lease be amended in this way?

A. No. We took the stance that we would take the asbestos out of the third and fourth floors and continue with the renovations in the expectation that they would then occupy the space. The relevance to the balance of the building was not considered at that time. That was something that was brought up by the Department of Public Works.

Q. I see. So your position was "Look, we'll just take it out of the third and fourth floors and" -- period?

A. At that particular time, that's correct.

Q. Yes. So what you wanted was an amendment from the requirement that it be removed from the whole building, you wanted that down to you just have to take it out of the third and fourth floors?

A. We did not consider the whole building at the time. We were more concerned with the third and fourth floors. That was the damage control area.

Q. That was an amendment you wanted, that all you had to do was take it out of the third and fourth floors; that's the amendment to the offer to lease you wanted?

A. We were planning to take it out of the third and fourth floors only, yes.

683 Mr. Hall's attention was then directed to a letter he had written to Public Works Canada on April 2, 1987, in which he advised, in part, that:

The Landlord will live up to its' [sic] commitment and remove the contaminated material from both the 3rd and 4th floors. This will be done under strict regulations imposed and monitored by the Workers' Compensation Board to assure no exposure to any hazard is incurred by workers or the occupants in the building. My understanding is that at the conclusion of this work, both floors will be inspected and declared asbestos free and would therefore pose no hazard to the occupants of these floors ...

Whilst no testing has been completed, it must be assumed that this contaminated material exists on the other levels of Sears, however, we have requested an official hazard evaluation study be undertaken to prove no risk is posed to any occupants of the building. Initial indications would suggest that this highly cementitious material is extremely well bonded to the structure and therefore does not pose a problem unless it is subject to unusual disturbance. All necessary precautions will be undertaken to ensure no disturbance takes place. Any areas determined to be contaminated will have the material removed when a change in tenancy occurs or another opportunity for its' [sic] removal presents itself ...

Whatever the outcome of the final testing, the Landlord will live up to his responsibility to the best of his ability and trust we shall be able to work out an amicable solution to ensure the earliest completion date for the Department of Fisheries and Oceans.

684 Mr. Giles then continued his cross-examination of Mr. Hall:

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Q. Now, the reason I suggested to you earlier that you had initiated the suggestion with the Department of Public Works that's reflected in the amendment is because, what I find on the second page of this letter which is dated April the second, in the second full paragraph, I might read that and ask you a question or two as I go through. This letter - you signed this letter?

A. I did.

Q. And it was sent to the Public Works Canada on April the 2nd?

A. Correct.

Q. And you say in the second full paragraph, the second page,

Whilst no testing has been completed, it must be assumed that this contaminated material exists on the other levels of Sears ...

Now this letter was written after the shutdown by the Workmen's Compensation Board?

A. That is correct.

Q. So that by no testing having been completed, you're referring to testing in floors other than three and four?

A. Correct.

Q. And you made the assumption that the contaminated material exists on the other levels of Sears. What was the basis of that assumption?

A. That the material was sprayed at the same time or that the construction process was all done at the same time, therefore the assumption would have been that if it is on one floor it would be contained on others.

Q. Thank you. You go on,

... however, we have requested an official hazard evaluation study be undertaken to prove no risk is posed to any occupants of the building.

Now that's the report that you obtained, I think, on May the 2nd from Pinchin-Harris; is that correct?

A. Correct.

Q. Yes. And that was done to, as you say, "... to prove no risk is posed to any of the occupants of the building?"

A. That was done as a requirement of the WCB shutdown that we take a hazard evaluation report.

Q. What you say this, this sentence is true, you say,

"... we have requested an official hazard evaluation study be undertaken to prove no risk is posed to any occupants of the building", that is a true statement, I take it?

A. Correct.

Q. Then you go on:

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Initial indications would suggest that this highly cementitious material is extremely well bonded to the structure and therefore does not pose a problem unless it is subject to unusual disturbance.

And on what was that statement based?

A. That statement was based on discussions with Pinchin-Harris.

Q. You then say, "All necessary precautions will be undertaken to ensure no disturbance takes place." And then you say, "Any areas determined to be contaminated will have the material removed when a change in tenancy occurs or another opportunity for its' [sic] removal presents itself. Now, it's that sentence that put in my mind the idea that you had suggested the amendment language, the effect of the amendment which was agreed to by the Department of Public Works. Am I wrong in that?

A. No. That does seem to suggest that. I was not aware of this particular statement or line in my letter. As I said, this letter was drafted by a legal counsel in Toronto and was, in fact, sort of a political letter aimed at damage control in that it would permit the Department of Public Works to stay an occupant.

Q. I see. You wouldn't sign any document containing statements you knew to be untrue?

A. No. That's true.

Q. Or a document containing expressions of opinion you didn't share?

A. No. That's true.

685 At the time it was decided to remove the fireproofing material from the third and fourth floors of the Building, none of the other tenants in the Building were advised of the presence of asbestos. In fact, according to Mr. Hall, some of them had not even been advised up to the date of trial. When asked about that by Mr. Giles, Mr. Hall testified as follows:

Q. You, their landlord, have not seen fit to tell them?

A. No.

Q. Why not?

A. We do not consider the asbestos present in the 7th floor, as it exists today, to pose a danger. Our experts have told us, provided it is handled correctly, that it does not pose a danger.

Q. All right. Is that the same explanation for not telling the tenants on the lower mall, the upper mall and Simons on the 6th floor until '88?

A. That is correct.

Q. And I take it you formed this opinion as to the safety of this material in '87?

A. That is correct.

Q. Indeed you must have formed it at or about the time you got the Department of Public Works agreement?

A. That is correct.

Q. Which could have been as early as May?

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A. That is correct.

Q. So I mean you, in good conscience, must have been satisfied this was perfectly safe so long as any maintenance was done with adequate protections?

A. That is correct.

Q. And so anybody who was changing a light bulb or changing an chiller pipe or going up there for any other reason, he'd have to be careful to wear a mask and to shut off the air conditioning?

A. And to follow all the procedures laid out.

Q. Right. And as long as that was done, no problem?

A. That is correct.

686 Mr. Hall also made it clear that there is little, if any, chance of disturbance by a tenant. When asked about the possibility of tenants doing work that might disturb the material, he testified:

A. We would have done it for tenants.

Q. On their behalf, you mean?

A. On their behalf.

Q. But some of the work they could do could disturb the asbestos?

A. The majority of the work, not all of it, would be done by our own forces.

Q. And some could be done by their tenant forces?

A. Yes. Yes, potentially.

Q. That might result in some disturbance?

A. That is correct.

Q. Particularly if a tenant didn't know there was asbestos?

A. The tenants are required, by their lease, to inform us of any procedures or any alterations of any nature that are carried out in their premises and get our written approval prior to them commencing.

Q. Well, is it your experience all the tenants do that all the time?

A. Yes.

Q. Even when moving a telephone or most minor matters?

A. Minor matters such as moving a telephone, no.

Q. No?

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A. But that is done below the ceiling area.

Q. All right. Anyway, in not telling the tenants, that was a chance you were prepared to take that they wouldn't do anything that would disturb the asbestos?

A. There is no chance that they would go into that ceiling system, in my view, without our knowledge.

Q. All right. But whatever risk it was, whatever chances, is one you're prepared to take?

A. That is correct.

Q. Because you didn't tell them?

A. Correct.

687 An interesting illustration of the difference between what the plaintiffs say about the danger posed to the health of building occupants by the presence of an asbestos-containing fireproofing material and what they actually do about it emerged during the testimony of Mr. Rainer Hackert, the President of Polaris Canada. After acknowledging that Lord Realty is the owner of another building in which asbestos has been discovered, Mr. Hackert testified as follows:

Q. Where is that building?

A. In Montreal.

Q. Is that the building that is referred to as 800 Dorchester?

A. It was 800 Dorchester. I think the legal address is 800 Rene Levesque.

Q. As I recall your evidence on discovery asbestos was brought to the attention of the owners, of Lord Realty, in 1988?

A. Yes, mid-1988.

Q. I understand that that asbestos has not been removed?

A. Yes.

Q. And that is asbestos-containing fireproofing?

A. Yes

Q. With that building you had no contractual requirement by a tenant that would require the building owners to remove the fireproofing?

A. That's correct.

688 I have set out this evidence at such length because I think it is important that I demonstrate clearly why I have rejected the reasons given by the plaintiffs for having the fireproofing material removed from the Building.

XVII. Conclusions Regarding the Asbestos Claims

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689 Fundamental to the success of the plaintiffs' claims is proof, on a balance of probabilities, that:

690 1. the MK-3 fireproofing material contaminated the Building by continually releasing asbestos fibres into its atmosphere, thus causing physical damage to property of the plaintiffs and exposing tenants and others properly using the premises to such fibres;

691 2. the asbestos fibres contained in the product MK-3 posed a hazard to the health of workers and occupants of the Building;

692 3. as a consequence, Building workers and occupants have been exposed and continue to be exposed to an increased risk of contracting an asbestos related disease; and that

693 4. as a consequence of the inherently dangerous nature of the product, and the inability of the plaintiffs to repair, modify, perform ordinary maintenance work, or renovate the Building without causing the further release of asbestos fibres thereby endangering the health of Building occupants and workers, the plaintiffs undertook the removal and replacement of all of the asbestos-containing fireproofing in the Building.

694 That is what the plaintiffs have alleged, and that is what they must prove.

695 In my opinion, they have failed on all counts.

696 Based on the expert medical evidence I heard, I have reached the following conclusions with respect to the three principal diseases associated with exposure to asbestos fibres.

A. Asbestosis

697 All of the medical experts testified that a high level of exposure to asbestos is required in order to cause asbestosis. Based on that evidence, it can safely be said that the state of medical knowledge at all relevant times was that there is no risk of contracting asbestosis as a result of the low levels of exposure to asbestos encountered in public buildings.

B. Lung Cancer

698 One of the risks which the plaintiffs say is run by occupants of buildings which contain sprayed asbestos-containing fireproofing materials, such as the Spencer Building, is an increased risk of contracting lung cancer. They maintain that it is only theory, not fact, that occupational or asbestosis levels of asbestos exposure are required in order to produce lung cancer.

699 Dr. Bates testified that in 1972 many of those involved in asbestos research were of the opinion that in order to get lung cancer from asbestos exposure, one must first contract asbestosis. That assertion was confirmed by the evidence of other medical experts. For example, Dr. Elmes testified that the medical evidence available in 1972 showed clear differences in the risk of lung cancer, depending upon fibre type and the nature of exposure. He confirmed that the evidence then available established clearly that, at the low levels of exposure encountered by the general public, there was no risk of lung cancer. Moreover, he said that subsequent research has confirmed that view.

700 I accept Dr. Elmes' opinion.

701 I find that when the MK-3 was installed in the Building, the established medical opinion was that the low levels of exposure to asbestos experienced by the ordinary occupants of public buildings posed no increased risk of contracting lung cancer. I also find that, while there is current disagreement among the experts as to whether asbestosis is a prerequisite to lung cancer, there is nevertheless firm agreement today that low levels of exposure, such as those encountered in public buildings, do not increase the risk of lung cancer.

C. Mesothelioma

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702 The situation with respect to mesothelioma is more complicated. As the IARC Report indicated, there was in 1972 no evidence of an increased risk of contracting mesothelioma from the low levels of asbestos to which the general population in urban areas was exposed. In his report, Dr. Bates quoted the following passage from the IARC report:

There is evidence of association of mesothelial tumours with air pollution [sic] in the neighbourhood of crystallite mines and of factories using mixtures of fibre types. The evidence relates to conditions many years ago. There is no evidence of a risk to the general public at present.

703 According to Dr. Bates, studies done by 1972 indicated that all types of asbestos fibres produced mesothelioma in rats. However, as both Dr. Bates and Dr. Elmes acknowledged, it was believed that the risk of contracting mesothelioma varied with the fibre type. According to Dr. Elmes, crocidolite was thought to create the greatest risk, followed by amosite, and less still by chrysotile fibres. It was also recognized by 1972 that a small number of cases of mesothelioma had no asbestos-related exposure.

704 I find that at the relevant time there was no evidence of a risk of contracting mesothelioma at low levels of exposure to asbestos, particularly where the exposure has been to chrysotile fibres.

705 Current medical opinion is divided as to whether exposure to chrysotile fibres causes mesothelioma. Dr. Frank suggested that it does. Dr. Elmes opined that, although it had been found to cause mesothelioma in animals, it is becoming "more doubtful" that it does so in humans. Dr. Churg stated unequivocally that there is no evidence that chrysotile causes mesothelioma in humans.

706 Wherever the truth may lie so far as chrysotile being a cause of mesothelioma in humans, I find on the evidence that the actual risk of contracting mesothelioma from chrysotile asbestos fibres is at worst minimal, and at best non-existent. I need not make a definitive finding on this point because, for the purposes of this case, it is not necessary to do so. That is so because, as with asbestosis and lung cancer, what is agreed among all of the experts -- save for Dr. Frank -- is that only high levels of exposure will produce mesothelioma.

707 Where there is a conflict between the evidence of Dr. Frank and the medical experts called by the Grace defendants, I prefer the evidence of the latter. In my opinion, the plaintiff was not successful during cross-examination in refuting their very convincing opinions on this point. A good deal of those cross-examinations consisted of putting to the witness other studies that suggested a contrary opinion. Those studies were not, for the reasons I gave earlier, allowed into evidence for the truth of their contents, but only to test the veracity of the witness's opinion.

708 Because of their age -- that is, when they were conducted -- many of those studies were effectively dismissed by the witnesses as not reflecting the current thinking on the topic. For example, when asked about the findings in the study from 1970, Dr. McDonald stated in no uncertain terms that:

... it does seem to me to concentrate on what we thought 23 years ago as opposed to what we now know is of limited use.

709 Similar sentiments were expressed by other expert witnesses.

710 As I have stated, all of the medical experts, except Dr. Frank, opined that the levels of exposure to asbestos fibres encountered in buildings is far too low to increase the risk of a building worker or occupant contracting any of the asbestos-related diseases, including mesothelioma. I accept those opinions.

711 Based on the medical evidence that I have accepted, I find that exposure to the low levels of asbestos fibres typically found in the air circulating in public buildings poses no appreciable risk to the health of building occupants.

712 So far as the Spencer Building itself is concerned, far from establishing a "real and substantial" danger to persons, the evidence satisfies me that the MK-3 that was installed between 1972 and 1975 was not and is not an inherently dangerous

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product. I have no hesitation in concluding that the asbestos fibres contained in that MK-3 did not "contaminate" the Building, nor did they expose its occupants and workers to an increased risk of contracting any of the asbestos-related diseases. Nor did any asbestos fibres that were released into the atmosphere of the Building by that product cause damage to property.

713 From these conclusions, it follows that there has been no negligence, no breach of a duty of care or a duty to warn, and no misrepresentation.

714 In the introductory section of this judgment, I referred to the "second wave" of asbestos property damage claims proceeding through the American courts. Several of the American decisions that were referred to by counsel involved claims against Grace-Conn. arising out of the installation of Monokote MK-3.

715 I am conscious of the fact that a large number of those decisions (usually reviews by appellate courts of jury decisions) favoured the plaintiffs. While not binding on this court, those judgments and the views expressed therein do have persuasive authority.

716 However, after consideration of the testimonial and documentary evidence presented in this case, I do not agree with those American courts that have found Monokote MK-3 to be a dangerous product and thus awarded judgment against Grace-Conn.

717 For the reasons I have given, the plaintiffs' claims are dismissed. It follows that it will not be necessary for me to deal with the many third party claims.

XVIII. Foundation's Counterclaim

718 In its counterclaim, Foundation alleges that the plaintiffs (without distinguishing between them) were obliged by the General Conditions of the Construction Contract dated August 1, 1974, to provide and maintain, in the joint names of the owners and Foundation, insurance against all risks of direct loss or damage to property. They say that the insurance was also intended to protect, as unnamed insureds, the architect, all sub-contractors, and any others having an insurable interest in the construction and renovation work being performed at the Harbour Centre. Accordingly, Foundation submits, if the plaintiffs suffered any damage to property, the defendants could only be held liable to the extent that the damages suffered exceed the amounts for which they maintained, or should have maintained, insurance.

719 Foundation further submits that the prosecution of this action by the plaintiffs is in breach of the November 10, 1977 Settlement Agreement, discussed above in the section entitled "Release and Assignment". As a result, Foundation says, it has been forced to incur the expense of defending this action.

720 In light of my finding that the plaintiffs have not proved any property damage, it is not really necessary to address the "insurance" argument. But I do note that, in any event, the plaintiffs' response to that argument is a simple, but effective, one. Mr. Kendrick testified that the insurance was placed, and there is no evidence to the contrary. The plaintiffs maintain that none of the policies covered the alleged losses. They say that if Foundation or any other defendant wished to argue otherwise, it was up to them to tender the insurance policies and lead expert evidence to show that the alleged losses were covered. None of them did that.

721 However, I find that by bringing this action, the plaintiffs/defendants by counterclaim acted contrary to the terms of the November 10, 1977 Settlement Agreement.

722 Counsel may make arrangements to speak to the matter of costs.

Action dismissed.

END OF DOCUMENT

Westlaw

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1997 CarswellBC 500

Privest Properties Ltd. v. Foundation Co. of Canada
Privest Properties Ltd., Lord Realty Holdings Ltd., Polaris Realty (Canada) Limited, Lordina Limited, and Polaris Realty (Western) Limited (Plaintiffs / Appellants) and The Foundation Company of Canada Limited, Donalco Services Ltd., W.R. Grace & Co. of Canada Ltd., Eng & Wright Partners, Architects and W.R. Grace & Co. -- Conn (Defendants / Respondents); Lordina Limited (Defendant by Counterclaim / Appellant) and The Foundation Company of Canada Limited, Double A/D Distributors Ltd., Donalco Services Ltd., MacKenzie Snowball, Skalbania & Associates Ltd., Webb, Zerafa, Menkes, Housden; Eng & Wright Partners, Architects, Nelson Skalbania, Donald Thomas, Charles Wright, Gerhard K. Schadow, Douglas Faulkner, Martin Bruckner, Workers Compensation Board, Gilbert Eng, and W.R. Grace & Co. of Canada Ltd. (Third Parties / Respondents)

British Columbia Court of Appeal
Prowse, Donald and Newbury JJ.A.

Heard: November 25-29 and December 2-6, 1996

Judgment: February 20, 1997

Docket: Vancouver CA021008

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Jack M. Giles, Q.C. and *Robert J. McDonell*, for respondent Foundation Co. of Canada.

John P. Singleton and *Jane Ingman-Baker*, for respondent Donalco Services Ltd.

Doug F. Robinson, Rodney L. Hayley and *Thomas S. Woods*, for respondent W.R. Grace & Co., W.R. Grace & Co. - Conn.

Bernie McGarva, for third party / respondent Webb, Zerafa.

Todd L. Cherniak and *R.W. Taylor*, for third party / respondent Workers' Compensation Board.

Subject: Evidence; Contracts; Public; Torts

Construction law --- Statutory regulation -- Miscellaneous issues.

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Construction law -- Statutory regulation -- Miscellaneous issues -- Hazardous building products -- During renovations, plaintiff owners and managers discovering asbestos-containing fireproofing previously installed in building -- Plaintiffs suing architect, contractor, installer, and manufacturer and supplier for damages arising out of removal and replacement of fireproofing -- Plaintiffs claiming that removal being necessary because product being inherently dangerous -- Question of dangerousness turning on whether building occupant or worker likely to encounter asbestos dust concentrations in excess of threshold limit set under Regulations -- Defendants' experts finding that levels of exposure being too low to increase risk of building worker or occupant contracting asbestos-related diseases -- Trial judge concluding that fireproofing used not inherently dangerous product and dismissing claims -- Trial judge not committing any palpable or overriding error -- Trial judge's general comments and conclusions embracing hazards from substance in place, and when disturbed -- Appeal dismissed -- Accident Prevention Regulations, 1972, B.C. Reg. 64/72.

Evidence --- Opinion evidence -- Weight of evidence -- Conflicting expert evidence.

Evidence -- Opinion evidence -- Weight of evidence -- Conflicting expert evidence -- Plaintiff building owners and managers suing various parties for damages arising out of removal and replacement of asbestos-containing fireproofing -- Plaintiffs claiming that removal being necessary because product being inherently dangerous -- Plaintiffs relying on actions of regulators to establish dangerousness rather than air sampling at time of disturbance -- Expert opinions and methods conflicting -- Trial judge not being persuaded by methods of proof adopted by plaintiffs and their experts -- Trial judge preferred evidence of defendants' experts in field of exposure risk -- Trial judge concluding that fireproofing used in previous construction not inherently dangerous product, and dismissing claims -- No palpable or overriding error committed -- Appellate court not being entitled to re-weigh evidence to make different choice on expert opinion -- Accident Prevention Regulations, 1972, B.C. Reg. 64/72 -- Appeal dismissed.

Evidence --- Legal proof -- Inferences.

Evidence -- Legal proof -- Inferences -- Plaintiff building owners and managers suing various parties for damages arising out of removal and replacement of asbestos-containing fireproofing -- Plaintiffs claiming that removal being necessary because product being inherently dangerous -- Plaintiffs relying on actions taken by regulators in use and handling of asbestos-containing products to infer that product being dangerous to workers -- Plaintiffs not performing air sampling at time of disturbance -- Trial judge preferring evidence of defendants' experts in field of exposure risk over indirect evidence offered by plaintiffs -- Plaintiffs failing to prove, on balance of probabilities, that exposure of workers to airborne asbestos had exceeded threshold limit value -- No palpable and overriding error committed -- Appeal dismissed -- Accident Prevention Regulations, 1972, B.C. Reg. 64/72.

The plaintiffs owned and managed a building which underwent construction in the 1970s. Years later, during the course of extensive renovations, it was discovered that an asbestos-containing fireproofing agent had been previously installed in the building. The matter came to the attention of the Workers' Compensation Board, and an order closing the area to unprotected workers was issued. In 1988, the plaintiffs commenced an action against the architect, the contractor, the installer, and the manufacturer and supplier, for damages suffered as a result of the removal and replacement of the fireproofing. The action was framed in both contract and tort. The plaintiffs claimed that removal was necessary because this was an inherently dangerous product which caused physical damage to their property, and which, when disturbed, endangered the health and safety of the building workers and occupants.

At trial, the question of dangerousness turned on whether any building occupant or worker would likely encounter asbestos dust concentrations in excess of the threshold limit set by the board under the *Accident Prevention Regulations* (B.C.). Rather than air sampling during disturbance activities, the plaintiffs advanced their case by an indirect approach. They relied on the actions taken by regulators regarding the use and handling of asbestos-containing products for the inference that the fireproofing used was dangerous to workers. They also presented the expert opinion of an industrial hygienist who sampled dust and debris accumulated on the surfaces beneath the fireproofing, to determine the potential for disturbance.

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The trial judge was not prepared to infer dangerousness from the indirect evidence offered by the plaintiffs. The hazard had to be assessed according to the intensity of the exposure. The trial judge preferred the evidence of the defendants' experts, who had stated that there was no scientific proof that working with or around this substance in place would create a measurable risk of harm. These experts were of the opinion that regulators had erred on the side of worker safety in banning the substance, and in requiring elaborate precautions. The levels of exposure to asbestos fibres encountered in buildings were far too low to increase the risk of a building worker or occupant contracting any of the asbestos-related diseases. Accordingly, the trial judge concluded, among other things, that the fireproofing was not an inherently dangerous product. He dismissed the plaintiffs' claims against the defendants, dismissed the third party claims, and allowed the contractor's counterclaim for its expenses in defending the action.

The plaintiffs appealed, alleging that the trial judge failed to grasp the real issue, namely, the hazard to workers when they disturbed the fireproofing.

Held:

The appeal was dismissed.

The trial judge did not commit any palpable or overriding error in his conclusion on dangerousness. Although he gave greater emphasis to the question of whether the ambient air in the building was contaminated, he expressly concluded that the asbestos-containing fireproofing did not present a danger to the health of workers. His general conclusions about dangerousness had to be taken to embrace the alleged hazards from the substance in place, and when it was disturbed.

The weight attached to the expert evidence by the trial judge could not be interfered with. The trial judge was not persuaded by the methods of proof adopted by the plaintiffs on this crucial issue of fact, and the court could not re-weigh the evidence and make a different choice as to expert opinion on appeal. The plaintiffs had failed to prove, on a balance of probabilities, that the exposure of workers to airborne asbestos would exceed the threshold limit value.

Cases considered:

Toneguzzo-Norvell (Guardian ad litem of) v. Burnaby Hospital, [1994] 2 W.W.R. 609, 87 B.C.L.R. (2d) 1, 18 C.C.L.T. (2d) 209, [1994] 1 S.C.R. 114, 110 D.L.R. (4th) 289, (sub nom. Toneguzzo-Norvell v. Savein) 162 N.R. 161, 38 B.C.A.C. 193, 62 W.A.C. 193, [1994] R.R.A. 1 (headnote only) -- applied

Winnipeg Condominium Corp. No. 36 v. Bird Construction Co., 18 C.L.R. (2d) 1, 23 C.C.L.T. (2d) 1, [1995] 3 W.W.R. 85, 43 R.P.R. (2d) 1, 176 N.R. 321, [1995] 1 S.C.R. 85, 121 D.L.R. (4th) 193, 100 Man. R. (2d) 241, 91 W.A.C. 241 -- considered

Statutes considered:

Limitation Act, R.S.B.C. 1979, c. 236

Generally -- referred to

Regulations considered:

Workers Compensation Act, S.B.C. 1968, c. 59

Accident Prevention Regulations, 1972, B.C. Reg. 64/72

Generally

[1997] 5 W.W.R. 265, 143 W.A.C. 182, 87 B.C.A.C. 182, 31 B.C.L.R. (3d) 114, 143 D.L.R. (4th) 635, 33 C.L.R. (2d) 29, [1997] B.C.J. No. 427, 5 W.W.R. 265

APPEAL by plaintiffs from judgment reported at (1995), 11 B.C.L.R. (3d) 1, [1995] 10 W.W.R. 385, 128 D.L.R. (4th) 577, 23 C.L.R. (2d) 1 (S.C.), dismissing claims against various parties for damages incurred in removal of asbestos-containing fireproofing from building and its replacement.

Per curiam:

Nature of Appeal

1 This is an appeal from the decision of Mr. Justice Drost pronounced 16 September 1995 dismissing the plaintiffs' claims against the defendants, dismissing the third party claims, and allowing the counterclaim of The Foundation Company of Canada Limited ("Foundation") for its expenses in defending the action. The action arose out of the installation, and ultimate removal, of asbestos-containing spray fireproofing, Monokote ("MK-3") from a building owned and/or managed during the relevant period by the plaintiffs. The trial involved 182 days of evidence over a period of two years and resulted in a 309-page judgment.

2 The trial decision is reported at (1995), 11 B.C.L.R. (3d) 1, [1995] 10 W.W.R. 385, 128 D.L.R. (4th) 577, 23 C.L.R. (2d) 1.

Issues on Appeal

3 The plaintiffs submit that Mr. Justice Drost erred in:

1. finding that MK-3 was not an inherently dangerous product;
2. finding that Geoffrey Kendrick (the project manager), and therefore the plaintiffs, "knew, or must be deemed to have known, that the fireproofing product specified by Eng & Wright ... for installation in the building contained asbestos";
3. holding that the plaintiffs' claims were barred by the *Limitation Act*, R.S.B.C. 1979, c. 236;
4. finding that a 1977 Settlement Agreement with Foundation applied to bar the plaintiffs' claims against Foundation, the Grace defendants, and Donalco Services Ltd.

Conclusion

4 For the reasons which follow, we have concluded that Mr. Justice Drost did not err in finding, on the evidence before him, that MK-3 was *not* an inherently dangerous product. Since our conclusion in that regard is determinative of the appeal, it is unnecessary for us to deal with the other issues raised. We would, therefore, dismiss the appeal.

Background

5 Because the trial decision has been reported, we will limit our comments to a brief description of the background giving rise to this litigation.

6 The plaintiffs are the owners/managers of the Spencer building (the "Building") which forms part of a large retail/commercial complex in downtown Vancouver. In 1973-1975, the Building underwent construction, including the addition of a tower. During the course of construction, MK-3, a fire-proofing agent, was installed in the Building. Eng & Wright were the architects on the project, Foundation was the contractor, and Donalco Services Ltd. ("Donalco") was the installer. Mr. Geoffrey Kendrick, who played a significant role in the ensuing litigation, was the project manager hired by the plaintiffs. The MK-3 was manufactured and supplied by Grace Canada, which is wholly owned by W.R. Grace & Co. -- Conn. (the "Grace defendants").

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7 In 1987, the 3rd and 4th floors of the Building were extensively renovated to meet the requirements of a new tenant. During the course of that renovation some of the existing fireproofing material was disturbed, and the presence of asbestos-containing MK-3 in the Building came to the attention of the Workers' Compensation Board (the "WCB"). The WCB issued an order closing the area to unprotected workers. Shortly thereafter, the plaintiffs embarked upon an abatement program which eventually led to the removal of most of the MK-3 fireproofing from the Building and its replacement with an asbestos-free fireproofing product.

8 The plaintiffs commenced action in 1988 for damages totalling \$7,555,841. which they say they suffered as a result of having to remove the MK-3 from the Building and replace it with another fireproofing agent. They maintained that they removed the MK-3 because it was an inherently dangerous product which caused physical damage to their property and which, when disturbed, endangered the health and safety of Building workers and occupants. They claimed that they had no knowledge that MK-3 contained asbestos until the time of the WCB stop-work order and that, had they known, they never would have agreed to its installation.

9 The plaintiffs framed their action against Foundation and Eng & Wright in contract and in tort, and against Donalco and Grace in tort.

10 The trial judge found that:

- (1) MK-3 was not an inherently dangerous product;
- (2) The plaintiffs' claims were barred by the *Limitation Act*;
- (3) The plaintiffs knew or ought to have known that there was asbestos in the MK-3 fireproofing when it was installed;
- (4) The Settlement Agreement signed in 1977 operated to bar the plaintiffs' claims against Foundation, Donalco and Grace.

11 As earlier noted, all of these findings are challenged by the plaintiffs.

Analysis

Dangerous Product

12 The pivotal question in this case is whether the MK-3 in the Building was a dangerous product. If the plaintiffs did not prove that it was dangerous, then all the other issues become academic.

13 The trial judge found that MK-3 was not dangerous. The plaintiffs argue on appeal that his finding related only to the allegation that the ambient air in the Building was contaminated. They say that he did not decide the real issue in the action, which was the risk of harm to workers when their activities disturbed the fireproofing during maintenance, repairs, and renovations. They submit that the evidence at trial established a serious hazard to worker health and safety.

14 We do not think the plaintiffs can succeed on either contention. Although the trial judge gave greater emphasis to the ambient air question his reasons show that he also decided the issue of workers' health. As to the nature of proof, the plaintiffs advanced their case by an indirect approach when air sampling during disturbance activities would have shown conclusively whether the exposure to workers was dangerous. The plaintiffs relied on the actions taken by regulators such as the Environmental Protection Agency in the United States ("EPA") and the WCB regarding the use and handling of asbestos-containing fireproofing for the inference that MK-3 is dangerous to workers. The plaintiffs also presented the expert opinion of an industrial hygienist who sampled dust and debris from the fireproofing in the Building to determine the potential for disturbance. From those results the expert

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derived a conclusion that the fireproofing had to be removed.

15 Experts called by the Grace defendants challenged this evidence. The experts said that there is no scientific proof that working with or around MK-3 in place would create a measurable risk of harm. They referred to tests that indicate the contrary. They further testified that regulators have erred on the side of worker safety in banning MK-3 and in requiring elaborate precautions. The trial judge said that he preferred the experts called by Grace. He was not prepared to infer dangerousness from the indirect evidence offered by the plaintiffs.

16 What does "dangerous" mean in a hazardous building products suit? In *Winnipeg Condominium Corp. No. 36 v. Bird Construction Co.*, [1995] 1 S.C.R. 85, the court required the showing of "a real and substantial danger", and held that the plaintiff must prove a "serious risk to safety" (at 125) and that "the danger was substantial and foreseeable" (at 130). The parties appear to agree on this definition.

17 The specific danger alleged by the plaintiffs is the inhalation of airborne fibres released from the fireproofing which may cause serious illness in the form of asbestosis, lung cancer or mesothelioma. The plaintiffs' case was presented to the trial judge on the basis that one asbestos fibre in the atmosphere of the Building was too many. They alleged that fibres would enter the breathing areas of the Building as a result of the natural breakdown of the surface of the product over time and when the fireproofing was disturbed by maintenance, repairs, and renovations. According to the plaintiffs, all occupants and users of the Building were placed in serious danger by MK-3.

18 The trial judge rejected the plaintiffs' theory, mostly based on the evidence of their medical expert, Dr. Arthur Frank, that there is no safe level of airborne asbestos fibres. The court preferred the defence experts' opinions on the risk of harm. They said, and the trial judge accepted, that the hazard must be assessed according to the intensity of the exposure, i.e., the concentration of the fibres in the breathing area, and the duration of the exposure. He expressed his preference in this way at 173 (11 B.C.L.R. (3d)):

Where there is a conflict between the evidence of Dr. Frank and the medical experts called by the Grace defendants, I prefer the evidence of the latter. In my opinion, the plaintiff was not successful during cross-examination in refuting their very convincing opinions on this point. A good deal of those cross-examinations consisted of putting to the witness other studies that suggested a contrary opinion. Those studies were not, for the reasons I gave earlier, allowed into evidence for the truth of their contents, but only to test the veracity of the witness's opinion.

19 We cannot interfere with the weight attached to expert evidence by the trial judge. In *Toneguzzo-Norvell (Guardian ad litem of) v. Burnaby Hospital*, [1994] 1 S.C.R. 114, McLachlin J. said at 121-2:

It is by now well established that a Court of Appeal must not interfere with a trial judge's conclusions on matters of fact unless there is palpable or overriding error. In principle, a Court of Appeal will only intervene if the judge has made a manifest error, has ignored conclusive or relevant evidence, has misunderstood the evidence, or has drawn erroneous conclusions from it: see *P. (D.) v. S. (C.)*, [1993] 4 S.C.R. 141, at pp. 188-89 (*per* L'Heureux-Dubé J.), and all cases cited therein, as well as *Geffen v. Goodman Estate*, [1991] 2 S.C.R. 353, at pp. 388-89 (*per* Wilson J.), and *Stein v. The Ship "Kathy K"*, [1976] 2 S.C.R. 802, at pp. 806-8 (*per* Ritchie J.). A Court of Appeal is clearly not entitled to interfere merely because it takes a different view of the evidence. The finding of facts and the drawing of evidentiary conclusions from facts is the province of the trial judge, not the Court of Appeal.

The Court of Appeal justified its intervention on the ground that it was in as good a position to draw inferences from the evidence as was the trial judge (at pp. 121-22):

There is no issue with respect to the veracity of these expert witnesses. As the trier of fact the trial judge was free to reject or adopt in whole or in part the evidence of experts he found qualified but in the absence of findings of credibility this court is in as good a position as the trial judge to review the

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expert evidence and to draw inferences of fact therefrom: *New Brunswick (Workmen's Compensation Board) v. Greer* (1973), [1975] 1 S.C.R. 347, 7 N.B.R. (2d) 171, 42 D.L.R. (3d) 595, 1 N.R. 99. It should undertake this task if the trial judge has failed to take into account some obvious feature of the evidence or has misapprehended its significance: *Croke (A Minor) v. Wiseman*, [1982] 1 W.L.R. 71, [1981] 3 All E.R. 852 (C.A.), per Griffiths L.J. at p. 859 (All E.R.).

I agree that the principle of non-intervention of a Court of Appeal in a trial judge's findings of facts does not apply with the same force to inferences drawn from conflicting testimony of expert witnesses where the credibility of these witnesses is not in issue. *This does not however change the fact that the weight to be assigned to the various pieces of evidence is under our trial system essentially the province of the trier of fact, in this case the trial judge.* [Emphasis added]

20 The WCB regulates occupational health and safety. It sets threshold limit values ("TLVs") for exposure to potentially harmful substances by workers in their employment. In the 1972 *Accident Prevention Regulations*, B.C. Reg. 64/72, passed by the WCB (in force when the MK-3 was applied to the Building) the concept of threshold limit values is explained:

Threshold Limit Values for 1972

Threshold Limit Values (TLV) refer to concentrations of airborne contaminants to which workmen may be repeatedly exposed without adverse effects. Because of individual susceptibility, a small percentage of workmen may experience some discomfort at concentrations at or below the stated concentrations. A smaller percentage of workmen may be more severely affected due to aggravation of pre-existing medical conditions.

Threshold Limit Values refer to time-weighted average concentrations for a 7-8 hour workday and 40 hour work week. These values are based on the best available information from industrial experience and human and animal experimental work. Because TLV's are time-weighted averages, excursions above the limit may be permitted provided they are compensated by an equivalent excursion below the limit. The extent of the excursion above the limit are very dependant on the toxicity of the contaminant, the frequency of these excursions, their cumulative effects and the duration of the high concentration periods.

21 The TLV set for asbestos in 1972 was 30 fibres per cubic centimetre of air. In 1978 it was reduced to 2 fibres/cc, where it remains.

22 The experts at trial discussed exposure hazard in relation to the 2 fibre/cc standard. The question of dangerousness turned on whether any building occupant or worker would likely encounter asbestos dust concentrations in excess of the threshold limit.

23 The plaintiffs allege that hazardous exposure would result from passive release of MK-3 in place (as a result of deterioration) and from disturbance in the course of maintenance, repair, and renovations. In his reasons Drost J. addressed himself primarily to the assertion that MK-3 contaminated the breathing air in the Building, the general ambient air, and therefore had to be removed. He found that MK-3 in place presented no hazard.

24 The plaintiffs do not attack that finding on appeal. They say the trial judge failed to grasp the real issue, the hazard to workers when they disturbed the fireproofing.

25 We do not accept that criticism of the trial judgment. While Drost J. devoted more space in his reasons to the alleged contamination of the ambient air, he expressly concluded that MK-3 did not present a danger to workers. He said at 174:

As I have stated, all of the medical experts, except Dr. Frank, opined that the levels of exposure to asbestos fibres encountered in buildings is far too low to increase the risk of a *building worker* or occupant

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contracting any of the asbestos-related diseases, including mesothelioma. I accept those opinions.

[ellipsis]

So far as the Spencer Building itself is concerned, far from establishing a "real and substantial" danger to persons, the evidence satisfies me that the MK-3 that was installed between 1972 and 1975 was not and is not an inherently dangerous product. I have no hesitation in concluding that the asbestos fibres contained in that MK-3 did not "contaminate" the Building, nor did they expose its occupants *and workers* to an increased risk of contracting any of the asbestos-related diseases. Nor did any asbestos fibres that were released into the atmosphere of the Building by that product cause damage to property. [Emphasis added]

26 Earlier in his judgment, the trial judge discussed the experts' evidence about the risk of harm when workers disturbed asbestos-containing fireproofing. It is important to know as background that MK-3 was mixed with water, vermiculite and gypsum on site and then sprayed on the surface to be fireproofed. This gave the product a cementitious quality, like plaster, which was designed to hold the material in place. This gave greater stability than that in dry sprayed products which are not bound in a matrix and tend to throw off fibres without deliberate disturbance.

27 In their evidence at trial several expert witnesses referred to a study by Dr. William Nicholson of Mount Sinai Hospital on asbestos exposure. Dr. Gordon Bragg was called by the Grace defendants to give expert evidence concerning the measurement and behaviour of airborne asbestos fibres in buildings. The trial judge made these observations at 137 of the reasons:

Dr. Nicholson's study shows that counts of asbestos fibres in the air in buildings in which *cementitious* asbestos-containing material was used were lower or equivalent to the counts found in the outside air. It also showed that some of the buildings in which dry sprayed fireproofing or insulation materials had been applied had slightly raised fibre counts.

[ellipsis]

As to the current state of knowledge, in my opinion, the evidence given by all of the medical experts, with the exception of Dr. Frank, clearly establishes that the type of exposure encountered in buildings is far too low to increase the risk of contracting any of the asbestos-related diseases.

And further, at 138:

Dr. Bragg is familiar with a great many studies that compare the indoor asbestos levels of buildings containing ACMs [asbestos-containing materials] with the outdoor level around the same buildings. He said that, in the great majority of those studies, it was concluded that there was no significant difference between indoor and outdoor levels.

Dr. Bragg noted that these findings applied whether or not the ACM was in good condition, and that they took into account the possibility of repairs being performed in the building.

Finally, on the risk of inhaling the ambient air the trial judge said at 142:

In short, Dr. Bragg's evidence confirms the opinions expressed by the medical experts called by the Grace defendants that there is no increased risk to workers or occupants from the low level of exposure to asbestos that one may expect to encounter in public buildings generally.

28 As we have said, the trial judge's reasons concentrate mainly on general air quality in the Building. Drost J. did not expressly deal with the arguments about the hazard to workers in the personal breathing zone of the disturbance they create. But the issue was squarely before him and he concluded that the Building was not unsafe for users or

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workers because of the asbestos in MK-3. This was a very long trial with complex evidence. We cannot conclude from the reasons that the trial judge overlooked a major feature of the case. In our view, his general conclusions about dangerousness must be taken to embrace the alleged hazards from MK-3 in place and when disturbed. He showed that he was alive to the issue of the dangerousness of MK-3 to workers, if it was disturbed, in the concluding part of his judgment at 171:

Fundamental to the success of the plaintiffs' claims is proof, on a balance of probabilities, that:

1. the MK-3 fireproofing material contaminated the Building by continually releasing asbestos fibres into its atmosphere, thus causing physical damage to property of the plaintiffs and exposing tenants and others properly using the premises to such fibres;
2. *the asbestos fibres contained in the product MK-3 posed a hazard to the health of workers and occupants of the Building;*
3. *as a consequence, Building workers and occupants have been exposed and continue to be exposed to an increased risk of contracting an asbestos related disease;*

and that

4. *as a consequence of the inherently dangerous nature of the product, and the inability of the plaintiffs to repair, modify, perform ordinary maintenance work, or renovate the Building without causing the further release of asbestos fibres thereby endangering the health of Building occupants and workers, the plaintiffs undertook the removal and replacement of all of the asbestos-containing fireproofing in the Building.*

[Emphasis added]

29 Did the plaintiffs prove that MK-3 is a dangerous product when disturbed? Put another way, did the plaintiffs show that the exposure of workers to airborne asbestos fibres would exceed the TLV of 2 fibres/cc? We cannot say that they did. Air sampling during renovations would have produced the evidence one way or the other, but the plaintiffs did not perform those tests. Instead they relied on the opinion of an expert, William Ewing, whose methodology involved sampling the dust and debris accumulated on the surfaces beneath the fireproofing. From that he determined the potential for disturbance which he found to be so high that he recommended removal as the best method of abatement of the risk.

30 Mr. Ewing's approach did not go to the heart of the dangerousness question: will workers inhale dangerous amounts of asbestos fibres? Exposure risk was the field of the experts called by Grace, Dr. Peter Elmes and Dr. Gordon Bragg, who said that disturbance potential determined by settled dust sampling will not reveal the concentration of airborne fibres. The trial judge accepted their criticisms of Mr. Ewing's methodology. We will set out his reasons (at 161-3) in full on this point because of their importance:

Some of the experts called by the Grace defendants were asked for their opinion of Mr. Ewing's Report.

Over the objections of Mr. Roberts, I found Dr. Elmes qualified to comment on the Report, on the basis that he had an expertise in the interpretation of air samples taken by others.

Dr. Elmes was asked whether the air sampling results from the Ewing Report suggest a risk to the Building occupants. Dr Elmes stated:

There are no air sampling, in the accepted sense of the word, results in this report. The samples were taken by picking up dust off various surfaces. They weren't taken from the air. So they consisted of

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particles, many of which were too large to be respirable. They were then subjected to ultrasonic treatment to break up these particles and, therefore, they may have created an artificial situation which may or may not represent what might have occurred at some time in the air of the building ...

This investigation, this examination of this dust that was taken from the surfaces within the building can be used to give us some idea of what the fibres are in the material which might be released if the material was damaged or disturbed. *It doesn't give us an idea of how much release was occurring or whether the people in the building were at any risk from the presence of this material in the building ...* (emphasis in text)

Dr. Elmes went on to suggest that these type of sampling techniques could be used to find out what "might be released" if the building was demolished or the material being stripped out.

Dr. Bragg expressed similar concerns. He suggested that the surface sampling techniques used by Mr. Ewing were procedures that existed in draft form only, in the sense that the procedure had not been codified by any of the codifying bodies. Indeed, he suggested that he was not aware of any regulatory body that suggests the use of this procedure, nor was he aware of its acceptance or use by any scientific organization.

According to Dr. Bragg, the problem with surface sampling is that it provides no insight into the key question, namely, whether there are measurable airborne levels of asbestos. In this regard, he stated:

There has been an enormous amount of research over the years, particularly in the nuclear industry, attempting to relate material on surfaces to material in the air and I think it's generally accepted now that there is no relationship and that the fundamental reason for that is that the relationship is between disturbance and airborne material and not between material on the surface.

In other words, simply because asbestos can be detected on the surface does not mean that fibres from it will become airborne and in turn pose a health risk.

When asked in cross-examination if an examination to determine whether the particle had moved was a reasonable thing to do, Dr. Bragg responded:

It depends on what our objective is. If our objective is to inquire whether it has moved, yes, it is. If our objective is to determine whether or not it's going to result in inhalable fibres in the air, then I would suggest that it is not an appropriate procedure.

Such a study, he acknowledged, may indicate whether there had been some form of disturbance, but he said that:

... it's important to discriminate between a disturbance which produces visible debris where the lay understanding that vibration and air flows may produce a disturbance is indeed true. Vibration and that type of air flow will, indeed, be capable, with certain types of materials, particularly with the dry sprayed material, of producing a disturbance which causes a change in location. What's important to do is to discriminate, though, between that -- and we are now able to do so on the basis of the type of study that Mr. Ewing has done, for example -- between that and the airborne material that is small enough to be of health significance.

I accept the criticisms expressed by Drs. MacDonald [sic -- Dr. Elmes] and Bragg about the methodology employed by Mr. Ewing. I am, accordingly, unable to accept that the results support a finding that the Building is in fact contaminated to a point where it posed a health hazard to its occupants, necessitating removal.

31 Dr. Bragg said that it was unlikely that disturbance would produce concentrations at the 2 fibre/cc level. He

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made reference to several studies: pounding a large dowel into the fireproofing; pulling wire cable over settled dust and debris; and sandblasting fixtures coated with fireproofing. In none of these tests did the air samples even approach the hazard level set by the WCB.

32 The plaintiffs argue that the danger can be inferred from the extent of the precautions required by the WCB in the safe handling of asbestos-containing materials. They point to the WCB's Manual of Standard Practices on the subject which divides risk of exposure into three categories: low, moderate, and high. The categories are defined by activities, not according to fibre counts in air sampling. At all levels some form of respirator must be worn and steps taken to prevent the escape of any dust from the work area. Protective clothing is required at the moderate level along with elaborate clean-up procedures. At the high risk level the work area must be sealed and air drawn to the outside by negative pressure. Workers must have a multi-chambered decontamination facility allowing them to remove their protective clothing, to shower, and to dress without the risk of carrying fibres from one activity to the other.

33 The plaintiffs also submit that Grace's theory at trial, obviously accepted by the trial judge, that MK-3 is safe *if handled properly*, implies dangerousness in that proper handling during disturbance involves extensive precautions. They say that this is confirmed by the trial judge's remarks (at 133) about demolition, which is just another form of disturbance:

It is clear that when an asbestos-containing building is demolished, stringent safety precautions of the nature described during this trial, and mandated by the regulatory authorities, must be taken.

34 Do these precautions prove a hazard to health? This was not the view taken by either Dr. Bragg or Dr. Elmes, both of whom felt that the increased risk of workers developing an asbestos related disease was negligible. Dr. Bragg said in his testimony:

Q So your evidence is that these regulatory agencies such as the EPA and the Provincial Government of British Columbia are publishing these documents for the public and they are promulgating information that is contrary to scientific facts; is that what you are saying?

A At the current time I am suggesting that it has caused the regulatory agencies to err extremely on the side of safety.

Q A prudent course?

A Not if it results in a redirection of resources to places where there is no significant risk.

Q I take it, Dr. Bragg, you wouldn't want them to err on the other side?

A I think that in the practice in this province there is a modest error on the side of safety and I think this is appropriate.

35 There is evidence on both sides of the issue. Drost J. found that the plaintiffs had not proven their case. In our opinion, the plaintiffs are asking us to re-weigh the evidence and make a different choice as to expert opinion. This we cannot do. As we have said, the plaintiffs had the opportunity to sample the air and demonstrate conclusively that when disturbed MK-3 is a dangerous product. In the end, the trial judge was not persuaded by the methods of proof adopted by the plaintiffs on this crucial issue of fact. We are unable to find that he committed any palpable or overriding error in his conclusion on dangerousness.

Disposition

36 The appeal is dismissed.

[1997] 5 W.W.R. 265, 143 W.A.C. 182, 87 B.C.A.C. 182, 31 B.C.L.R. (3d) 114, 143 D.L.R. (4th) 635, 33 C.L.R. (2d) 29, [1997] B.C.J. No. 427, 5 W.W.R. 265

Appeal dismissed.

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Date: 1997-02-20

Docket: CA021008

[Noteup] [Cited Decisions and Legislation]

Date: 19970220

Docket: CA021008

Registry: Vancouver

COURT OF APPEAL FOR BRITISH COLUMBIA

BETWEEN:

PRIVEST PROPERTIES LTD., LORD REALTY HOLDINGS LTD.,
POLARIS REALTY (CANADA) LIMITED, LORDINA LIMITED,
AND POLARIS REALTY (WESTERN) LIMITED

PLAINTIFFS
(APPELLANTS)

AND:

THE FOUNDATION COMPANY OF CANADA LIMITED, DONALCO
SERVICES LTD., W.R. GRACE & CO. OF CANADA LTD., ENG & WRIGHT
PARTNERS, ARCHITECTS and W.R. GRACE & CO. - CONN

DEFENDANTS
(RESPONDENTS)

AND:

LORDINA LIMITED

DEFENDANT BY COUNTERCLAIM
(APPELLANT)

AND:

THE FOUNDATION COMPANY OF CANADA LIMITED, DOUBLE
A/D DISTRIBUTORS LTD., DONALCO SERVICES LTD.,
MACKENZIE SNOWBALL, SKALBANIA & ASSOCIATES LTD., WEBB, ZERAFA,
MENKES, HOUSDEN; ENG & WRIGHT PARTNERS, ARCHITECTS,
NELSON SKALBANIA, DONALD THOMAS, CHARLES WRIGHT,
GERHARD K. SCHADOW, DOUGLAS FAULKNER, MARTIN BRÜCKNER,
WORKERS' COMPENSATION BOARD, GILBERT ENG, and W.R. GRACE
& CO. OF CANADA LTD.

THIRD PARTIES
(RESPONDENTS)

Before: The Honourable Madam Justice Prowse
The Honourable Mr. Justice Donald
The Honourable Madam Justice Newbury

Darrell Roberts, Q.C.
Susan Griffin
Leslie J. Muir

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Privest et al.

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Bernie McGarva

Counsel for the Third Party/Respondent:
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Todd L. Cherniak
R.W. Taylor

Counsel for the Third Party/Respondent:
Workers' Compensation Board

Place and Dates of Hearing

Vancouver, British Columbia
November 25, 26, 27, 28, 29,
December 2, 3, 4, 5 and 6, 1996

Place and Date of Judgment

Vancouver, British Columbia
February 20, 1997

Written Reasons for Judgment of the Court: